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REPORT TITLE: National POL Test 4018
Marlboro Lights Control 85mm (D6AQJ-1)
Versus
Marlboro Lights w/Flavor Substitute 6986-24 (D6AQK-1)

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Marlboro Lights w/Flavor Substitute 6986-24

1000364376

SUMMARY OF NATIONAL POL TEST 4018

The Marlboro Lights control was equally preferred (52%/48%) to the Marlboro Lights with flavor substitute 6986-24 by the total panel (N=313*). On the hedonic acceptability scale the total panel rated Marlboro Lights control higher (N=390; 5.84/5.60; $p < .07$). Marlboro Lights smokers (N=112*) preferred Marlboro Lights control (63%/37%; $p < .009$), rated it higher on the hedonic acceptability scale (N=128; 6.52/5.65; $p < .002$), and qualitatively judged it to be more satisfying (N=131; $p < .007$). No qualitative differences between the two cigarettes were found by the total panel.

The purpose of the test was to determine if a taste difference occurs due to a flavor substitution. Analytically, the cigarettes were not different on any of the parameters tested. (Appendix A)

The cigarettes were mailed on November 17, 1976, to 243 Marlboro Lights smokers and a cross section of 357 85mm Hi-Fi smokers. The results were analyzed when 399 usable ballots (67%) had been returned. The test requester was J. Duggins. (See Ballot, Appendix B)

RESULTS:

1. Marlboro Lights control was preferred by Marlboro Lights smokers (N=131; $p < .009$), Marlboro Lights smokers aged 18-34 (N=82; $p < .06$), Marlboro Lights smokers aged 35 and over (N=49; $p < .07$), and panelists aged 30-39 (N=75; $p < .04$). (Table 12)
2. On the hedonic scale of acceptability the total panel (N=390; $p < .07$), Marlboro Lights smokers (N=128; $p < .002$), and the majority of other subgroups rated Marlboro Lights control higher. (Table 2)
3. Qualitatively, panelists aged 30-39 (N=75) judged Marlboro Lights control to have better flavor ($p < .07$; Table 4) and to be cooler ($p < .02$; Table 9) than Marlboro Lights with flavor substitute 6986-24.

More satisfying was ascribed to Marlboro Lights control by panelists aged 30-39 (N=75; $p < .03$), Marlboro Lights smokers (N=131; $p < .007$), Marlboro Lights smokers aged 18-34 (N=82; $p < .06$), and Marlboro Lights smokers aged 35 and over (N=49; $p < .05$). (Table 7)

Panelists aged 40-49 (N=65; $p < .08$) found Marlboro Lights with the flavor substitute 6986-24 to have the better aftertaste. (Table 8)

* Panelists indicating a preference.

RESULTS (continued)

4. On the three point qualitative attribute questions the Marlboro Lights smokers judged Marlboro Lights with the flavor substitute to be too hot ($p < .01$) and too strong ($p < .05$) in addition to finding it hotter ($p < .02$) and stronger ($p < .02$) than Marlboro Lights control.

The total panel found both cigarettes to be too hot ($p < .01/p < .001$).
(Table 14)

5. A tally of responses to open-ended questions regarding dislikes about each cigarette was supportive of the three point qualitative attribute data. Panelists directed more dislike comments concerning strength toward Marlboro Lights with the flavor substitute than Marlboro Lights control (54/34). (Table 6)

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SUMMARY OF 4018 MARL LGTS VS MARL LGTS W/ FLAVOR SUB.

BASED UPON 399 USABLE RETURNS

MARL LGTS. MARL LT W/ FL

SCALE RATINGS

5.84

5.60

STANDARD DEVIATIONS

2.05

2.01

PROBABILITY

.0687

PREFERENCE

51.8

48.2

PROBABILITY

.5889

PRODUCT OPINION LABORATORY, JAN., 77

1000364379

TABLE 2

NINE-POINT SCALE RATING: 1=DISLIKE EXTREMELY, 9=LIKE EXTREMELY

	NUMBER	SCALE RATINGS		STANDARD DEVIATIONS		PROBABILITY
		MARL LGTS.	MARL LT W/ FL	MARL LGTS.	MARL LT W/ FL	
TOTAL PANEL	390	5.84	5.60	2.05	2.01	.0687
AGES 18-29	151	5.93	5.75	1.94	1.93	.5950
AGES 30-39	71	6.06	4.86	2.01	2.24	.0007
AGES 40-49	64	5.52	5.88	2.02	1.74	.2786
AGE 50 AND OVER	104	5.77	5.71	2.27	2.01	.8197
ALL MALES	178	5.89	5.60	2.02	2.03	.1599
MALES 18-34	87	6.24	5.74	1.73	1.94	.0626
MALES 35 AND OVER	91	5.56	5.46	2.23	2.13	.7599
ALL FEMALES	212	5.80	5.60	2.08	1.99	.2542
FEMALES 18-34	100	5.63	5.52	2.09	2.03	.6624
FEMALES 35 AND OVER	112	5.95	5.68	2.07	1.95	.2525
ALL 85MM HI-FI SMOKERS	295	5.94	5.64	2.09	2.02	.0437
AGES 18-34	146	6.05	5.53	1.97	2.03	.0121
AGE 35 AND OVER	149	5.83	5.74	2.19	2.00	.6764
MARLBORO LGTS. SMOKERS	128	6.52	5.65	1.93	2.15	.0011
AGES 18-34	80	6.41	5.60	1.83	2.14	.0093
AGE 35 AND OVER	48	6.69	5.73	2.08	2.18	.0319
OTHER 85MM HI-FI SMOKERS	167	5.50	5.63	2.10	1.91	.5333
AGES 18-34	66	5.61	5.45	2.05	1.90	.5539
AGE 35 AND OVER	101	5.43	5.74	2.14	1.92	.1936
ALL OTHER SMOKERS	95	5.54	5.48	1.93	1.98	.8492
LIGHT SMOKERS (<15)	40	5.52	5.47	2.14	1.78	.8924
MEDIUM SMOKERS (15-24)	141	5.74	5.72	2.07	2.00	.9180
HEAVY SMOKERS (25+)	208	5.96	5.55	2.03	2.06	.0288
PREFERRED CONTROL	158	7.06	4.63	1.26	1.89	.0001
PREFERRED EXPERIMENTAL	146	4.80	6.77	1.95	1.35	.0001

PRODUCT OPINION LABORATORY, 4018 MARL LGTS. VS. MARL LGTS. W/ FLAVOR SUB.

JAN., 77

1000364380

TABLE 3

SUMMARY OF QUESTIONS, TOTAL PANEL

	PERCENTAGES		PROBABILITY	
	MARL LGTS.	MARL LT W/ FL	NO DIFFERENCE	
HAS BETTER FLAVOR	39.1	39.1	21.8	1.0000
HAS THE EASIER DRAW	23.8	26.6	49.6	.5889
HAS MORE STRENGTH	36.8	38.1	25.1	.7980
IS MORE SATISFYING	39.1	34.8	26.1	.6003
HAS THE BETTER AFTERTASTE	36.1	33.8	30.1	.6572
IS COOLER	32.6	26.6	40.9	.2277
HAS THE BETTER AROMA	25.8	26.1	48.1	.9590
IS Milder	39.6	36.6	23.8	.5554
ALL THINGS CONSIDERED, WHICH DID YOU PREFER	40.6	37.8	21.6	.5889

PRODUCT OPINION LABORATORY, 4018 MARL LGTS VS MARL LGTS W/ FLAVOR SUB

JAN., 77

1000364381

TABLE 4

HAS BETTER FLAVOR

	NUMBER	PERCENTAGES			PROBABILITY
		MARL LGTS	MARL LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	39.1	39.1	21.8	1.0000
AGES 18-29	153	35.3	44.4	20.3	.2567
AGES 30-39	75	53.3	32.0	14.7	.0615
AGES 40-49	65	33.8	38.5	27.7	.7114
AGE 50 AND OVER	106	37.7	36.8	25.5	.9196
ALL MALES	183	39.9	44.3	15.8	.5616
MALES 18-34	90	42.2	45.6	12.2	.7505
MALES 35 AND OVER	93	37.6	43.0	19.4	.6108
ALL FEMALES	216	38.4	34.7	26.9	.5932
FEMALES 18-34	101	36.6	40.6	22.8	.6934
FEMALES 35 AND OVER	115	40.0	29.6	30.4	.2624
ALL 85MM HI-FI SMOKERS	302	39.7	36.8	23.5	.6112
AGES 18-34	149	42.3	38.3	19.5	.6291
AGE 35 AND OVER	153	37.3	35.3	27.5	.8038
MARLBORO LGTS SMOKERS	131	45.8	33.6	20.6	.1587
AGES 18-34	82	43.9	36.6	19.5	.5150
AGE 35 AND OVER	49	49.0	28.6	22.4	.1495
OTHER 85MM HI-FI SMOKERS	171	35.1	39.2	25.7	.5993
AGES 18-34	67	40.3	40.3	19.4	1.0000
AGE 35 AND OVER	104	31.7	38.5	29.8	.5002
ALL OTHER SMOKERS	97	37.1	46.4	16.5	.6360
LIGHT SMOKERS (<15)	43	41.9	34.9	23.3	.6524
MEDIUM SMOKERS (15-24)	143	39.2	37.1	23.8	.7976
HEAVY SMOKERS (25+)	212	38.2	41.5	20.3	.6365
PREFERRED CONTROL	162	76.5	10.5	13.0	.0001
PREFERRED EXPERIMENTAL	151	7.9	84.1	7.9	.0001

PRODUCT OPINION LABORATORY, 4018 MARL LGTS VS MARL LGTS W/ FLAVOR SUB.

JAN., 77

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TABLE 5

HAS THE EASIER DRAW

	NUMBER	PERCENTAGES			PROBABILITY
		MARL LGTS.	MARL LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	23.8	26.6	49.6	.5889
AGES 18-29	153	24.2	29.4	46.4	.5252
AGES 30-39	75	24.0	26.7	49.3	.8124
AGES 40-49	65	20.0	29.2	50.8	.5363
AGE 50 AND OVER	106	25.5	20.8	53.8	.6331
ALL MALES	183	26.8	29.0	44.3	.7651
MALES 18-34	90	32.2	26.7	41.1	.6049
MALES 35 AND OVER	93	21.5	31.2	47.3	.6467
ALL FEMALES	216	21.3	24.5	54.2	.6395
FEMALES 18-34	101	18.8	30.7	50.5	.2306
FEMALES 35 AND OVER	115	23.5	19.1	57.4	.6464
ALL 85MM HI-FI SMOKERS	302	23.5	25.8	50.7	.6901
AGES 18-34	149	25.5	26.2	48.3	.9325
AGE 35 AND OVER	153	21.6	25.5	52.9	.6335
MARLBORO LGTS. SMOKERS	131	25.2	27.5	47.3	.7894
AGES 18-34	82	25.6	25.6	48.8	1.0000
AGE 35 AND OVER	49	24.5	30.6	44.9	.6723
OTHER 85MM HI-FI SMOKERS	171	22.2	24.6	53.2	.7579
AGES 18-34	67	25.4	26.9	47.8	.8985
AGE 35 AND OVER	104	20.2	23.1	56.7	.7662
ALL OTHER SMOKERS	97	24.7	28.9	46.4	.6878
LIGHT SMOKERS (<15)	43	32.6	27.9	39.5	.7585
MEDIUM SMOKERS (15-24)	143	21.7	24.5	53.8	.7377
HEAVY SMOKERS (25+)	212	23.1	27.8	49.1	.5004
PREFERRED CONTROL	162	40.1	13.6	46.3	.0011
PREFERRED EXPERIMENTAL	151	11.3	48.3	40.4	.0001

PRODUCT OPINION LABORATORY, 4018 MARL LGTS. VS. MARL LGTS. W/ FLAVOR SUB.

JAN. 77

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TABLE 6

HAS MORE STRENGTH

	NUMBER	PERCENTAGES		PROBABILITY	
		MARL. LGTS.	MARL. LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	359	36.8	38.1	25.1	.7980
AGES 18-29	153	37.3	41.2	21.6	.6335
AGES 30-39	75	34.7	48.0	17.3	.2469
AGES 40-49	65	43.1	30.8	26.2	.6780
AGE 50 AND OVER	106	34.0	31.1	34.9	.7682
ALL MALES	183	40.4	39.3	20.2	.8772
MALES 18-34	90	42.2	42.2	15.6	1.0000
MALES 35 AND OVER	93	38.7	36.6	24.7	.8302
ALL FEMALES	216	33.8	37.0	29.2	.6395
FEMALES 18-34	101	34.7	40.6	24.8	.5579
FEMALES 35 AND OVER	115	33.0	33.9	33.0	.9229
ALL 85MM HI-FI SMOKERS	302	38.4	35.4	26.2	.6112
AGES 18-34	149	40.9	37.6	21.5	.6854
AGE 35 AND OVER	153	35.9	33.3	30.7	.7455
MARLBORO LGTS. SMOKERS	131	35.9	42.0	22.1	.5081
AGES 18-34	82	35.4	43.9	20.7	.5540
AGE 35 AND OVER	49	36.7	38.8	24.5	.8813
OTHER 85MM HI-FI SMOKERS	171	40.4	30.4	29.2	.1907
AGES 18-34	67	47.8	29.9	22.4	.1389
AGE 35 AND OVER	104	35.6	30.8	33.7	.6300
ALL OTHER SMOKERS	97	32.0	46.4	21.6	.1516
LIGHT SMOKERS (<15)	43	44.2	25.6	30.2	.2204
MEDIUM SMOKERS (15-24)	143	38.5	35.7	25.9	.7377
HEAVY SMOKERS (25+)	212	34.4	42.0	23.6	.2714
PREFERRED CONTROL	162	30.2	51.2	18.5	.0077
PREFERRED EXPERIMENTAL	151	52.3	33.1	14.6	.0175

PRODUCT OPINION LABORATORY, 4018 MARL. LGTS. VS. MARL. LGTS. W/ FLAVOR SUB.

JAN., 77

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TABLE 7

IS MORE SATISFYING

	NUMBER	PERCENTAGES			PROBABILITY
		MARL.LGTS.	MARL.LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	39.1	34.8	26.1	.6005
AGES 18-29	153	38.6	37.3	24.2	.8660
AGES 30-39	75	52.0	26.7	21.3	.0267
AGES 40-49	65	29.2	46.2	24.6	.1692
AGE 50 AND OVER	106	36.8	30.2	33.0	.5040
ALL MALES	183	41.0	36.1	23.0	.5133
MALES 18-34	90	47.8	32.2	20.0	.1363
MALES 35 AND OVER	93	34.4	39.8	25.8	.6108
ALL FEMALES	216	37.5	33.8	28.7	.5932
FEMALES 18-34	101	34.7	38.6	26.7	.6934
FEMALES 35 AND OVER	115	40.0	29.6	30.4	.2624
ALL 85MM HI-FI SMOKERS	302	40.4	32.5	27.2	.1639
AGES 18-34	149	44.3	31.5	24.2	.1157
AGE 35 AND OVER	153	36.6	33.3	30.1	.6891
MARLBORO LGTS. SMOKERS	131	51.1	27.5	21.4	.0069
AGES 18-34	82	50.0	29.3	20.7	.0574
AGE 35 AND OVER	49	53.1	24.5	22.4	.0430
OTHER 85MM HI-FI SMOKERS	171	32.2	36.3	31.6	.5993
AGES 18-34	67	37.3	34.3	28.4	.8024
AGE 35 AND OVER	104	28.8	37.5	33.7	.6185
ALL OTHER SMOKERS	97	35.1	42.3	22.7	.5155
LIGHT SMOKERS (<15)	43	41.9	34.9	23.3	.6524
MEDIUM SMOKERS (15-24)	143	37.1	34.3	28.7	.7377
HEAVY SMOKERS (25+)	212	40.1	35.4	24.5	.5004
PREFERRED CONTROL	162	87.7	1.9	10.5	.0001
PREFERRED EXPERIMENTAL	151	2.0	84.8	13.2	.0001

PRODUCT OPINION LABORATORY, 4018, MARL.LGTS.VS.MARL.LGTS.W/FLAVOR SUB.

JAN., 77

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TABLE 8

HAS THE BETTER AFTERTASTE

	NUMBER	PERCENTAGES			PROBABILITY
		MARL. LGTS.	MARL. LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	36.1	33.8	30.1	.6572
AGES 18-29	153	36.6	35.9	27.5	.9334
AGES 30-39	75	40.0	22.7	37.3	.1295
AGES 40-49	65	27.7	49.2	23.1	.0789
AGE 50 AND OVER	106	37.7	29.2	33.0	.6138
ALL MALES	183	37.2	32.8	30.1	.5616
MALES 18-34	90	40.0	33.3	26.7	.5345
MALES 35 AND OVER	93	34.4	32.3	33.3	.8302
ALL FEMALES	216	35.2	34.7	30.1	.9442
FEMALES 18-34	101	34.7	35.6	29.7	.9176
FEMALES 35 AND OVER	115	35.7	33.9	30.4	.8464
ALL 85MM HI-FI SMOKERS	302	37.4	33.4	29.1	.5027
AGES 18-34	149	39.6	34.2	26.2	.5196
AGE 35 AND OVER	153	35.3	32.7	32.0	.7455
MARLBORO LGTS. SMOKERS	131	43.5	31.3	25.2	.1587
AGES 18-34	82	41.5	34.1	24.4	.5150
AGE 35 AND OVER	49	46.9	26.5	26.5	.1495
OTHER 85MM HI-FI SMOKERS	171	32.7	35.1	32.2	.7579
AGES 18-34	67	37.3	34.3	28.4	.8024
AGE 35 AND OVER	104	29.8	35.6	34.6	.5637
ALL OTHER SMOKERS	97	32.0	35.1	33.0	.7588
LIGHT SMOKERS (<15)	43	25.6	27.9	46.5	.8735
MEDIUM SMOKERS (15-24)	143	32.9	37.1	30.1	.6221
HEAVY SMOKERS (25+)	212	40.1	33.0	26.9	.3037
PREFERRED CONTROL	162	75.3	7.4	17.3	.0001
PREFERRED EXPERIMENTAL	151	4.0	75.5	20.5	.0001

PRODUCT OPINION LABORATORY, 4018, MARL. LGTS. VS. MARL. LGTS. W/ FLAVOR SUB.

JAN. 77

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TABLE 9

IS CDBLER

	NUMBER	PERCENTAGES			PROBABILITY
		MARL LGTS.	MARL LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	32.6	26.6	40.9	.2277
AGES 18-29	153	34.6	26.1	39.2	.2936
AGES 30-39	75	45.3	17.3	37.3	.0148
AGES 40-49	65	21.5	38.5	40.0	.1692
AGE 50 AND OVER	106	27.4	26.4	46.2	.9196
ALL MALES	183	36.6	27.3	36.1	.2064
MALES 18-34	90	38.9	27.8	33.3	.2922
MALES 35 AND OVER	93	34.4	26.9	38.7	.5249
ALL FEMALES	216	29.2	25.9	44.9	.6395
FEMALES 18-34	101	32.7	23.8	43.6	.6259
FEMALES 35 AND OVER	115	26.1	27.8	46.1	.8464
ALL 85MM HI-FI SMOKERS	302	32.5	25.2	42.4	.2030
AGES 18-34	149	36.9	23.5	39.6	.0975
AGE 35 AND OVER	153	28.1	26.8	45.1	.8660
MARLBORO LGTS. SMOKERS	131	39.7	25.2	35.1	.0931
AGES 18-34	82	37.8	26.8	35.4	.6788
AGE 35 AND OVER	49	42.9	22.4	34.7	.1495
OTHER 85MM HI-FI SMOKERS	171	26.9	25.1	48.0	.8135
AGES 18-34	67	35.8	19.4	44.8	.1758
AGE 35 AND OVER	104	21.2	28.8	50.0	.5610
ALL OTHER SMOKERS	97	33.0	30.9	36.1	.8335
LIGHT SMOKERS (<15)	43	32.6	23.3	44.2	.5493
MEDIUM SMOKERS (15-24)	143	29.4	26.6	44.1	.7377
HEAVY SMOKERS (25+)	212	34.4	27.4	38.2	.3037
PREFERRED CONTROL	162	57.4	11.1	31.5	.0001
PREFERRED EXPERIMENTAL	151	17.2	51.0	31.8	.0002

PRODUCT OPINION LABORATORY, 4018 MARL LGTS. VS. MARL LGTS. W/ FLAVOR SUB.

JAN. 77

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TABLE 10

HAS THE BETTER AROMA

	NUMBER	PERCENTAGES			PROBABILITY
		MARL LGTS.	MARL LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	25.8	26.1	48.1	.9590
AGES 18-29	153	24.2	25.5	50.3	.8660
AGES 30-39	75	34.7	22.7	42.7	.2993
AGES 40-49	65	18.5	32.3	49.2	.2635
AGE 50 AND OVER	106	26.4	25.5	48.1	.9196
ALL MALES	183	29.0	26.8	44.3	.7651
MALES 18-34	90	32.2	22.2	45.6	.6550
MALES 35 AND OVER	93	25.8	31.2	43.0	.6108
ALL FEMALES	216	23.1	25.5	51.4	.7336
FEMALES 18-34	101	20.8	27.7	51.5	.5065
FEMALES 35 AND OVER	115	25.2	23.5	51.3	.8464
ALL 85MM HI-FI SMOKERS	302	25.8	24.2	50.0	.7709
AGES 18-34	149	27.5	22.1	50.3	.5196
AGE 35 AND OVER	153	24.2	26.1	49.7	.8038
MARLBORO LGTS. SMOKERS	131	32.1	18.3	49.6	.1120
AGES 18-34	82	29.3	19.5	51.2	.6191
AGE 35 AND OVER	49	36.7	16.3	46.9	.1495
OTHER 85MM HI-FI SMOKERS	171	21.1	28.7	50.3	.6789
AGES 18-34	67	25.4	25.4	49.3	1.0000
AGE 35 AND OVER	104	18.3	30.8	51.0	.1997
ALL OTHER SMOKERS	97	25.8	32.0	42.3	.5498
LIGHT SMOKERS (<15)	43	25.6	32.6	41.9	.6524
MEDIUM SMOKERS (15-24)	143	22.4	22.4	55.2	1.0000
HEAVY SMOKERS (25+)	212	28.3	27.4	44.3	.8858
PREFERRED CONTROL	162	55.6	4.3	40.1	.0001
PREFERRED EXPERIMENTAL	151	4.0	58.3	37.7	.0001

PRODUCT OPINION LABORATORY, 4018, MARL LGTS. VS. MARL LGTS. W/ FLAVOR SUB.

JAN., 77

1000364388

TABLE 11

IS MILDFR

	NUMBER	PERCENTAGES			PROBABILITY
		MARL.LGTS.	MARL.LT W/ FL	NO DIFFERENCE	
TOTAL PANEL	399	39.6	36.6	23.8	.5554
AGES 18-29	153	44.4	35.9	19.6	.2936
AGES 30-39	75	44.0	33.3	22.7	.6415
AGES 40-49	65	26.2	46.2	27.7	.1030
AGE 50 AND OVER	106	37.7	34.0	28.3	.7000
ALL MALES	183	41.5	35.0	23.5	.6211
MALES 18-34	90	45.6	33.3	21.1	.2449
MALES 35 AND OVER	93	37.6	36.6	25.8	.9140
ALL FEMALES	216	38.0	38.0	24.1	1.0000
FEMALES 18-34	101	41.6	38.6	19.8	.7631
FEMALES 35 AND OVER	115	34.8	37.4	27.8	.7766
ALL 85MM HI-FI SMOKERS	302	36.8	37.4	25.8	.9044
AGES 18-34	149	40.9	38.3	20.8	.7424
AGE 35 AND OVER	153	32.7	36.6	30.7	.6335
MARIU8R8 LGTS.SMOKERS	131	47.3	34.4	18.3	.1337
AGES 18-34	82	48.8	34.1	17.1	.1821
AGE 35 AND OVER	49	44.9	34.7	20.4	.5177
OTHER 85MM HI-FI SMOKERS	171	28.7	39.8	31.6	.1426
AGES 18-34	67	31.3	43.3	25.4	.6702
AGE 35 AND OVER	104	26.9	37.5	35.6	.2806
ALL OTHER SMOKERS	97	48.5	34.0	17.5	.1516
LIGHT SMOKERS (<15)	43	39.5	41.9	18.6	.8735
MEDIUM SMOKERS (15-24)	143	36.4	41.3	22.4	.5657
HEAVY SMOKERS (25+)	212	41.5	32.5	25.9	.1890
PREFERRED CNTRL	162	61.7	22.2	16.0	.0001
PREFERRED EXPERIMENTAL	151	26.5	61.6	11.9	.0001

PRODUCT OPINION LABORATORY, 4018, MARL.LGTS.VS.MARL.LGTS.W/FLAVOR SUB.

JAN., 77

1000364389

TABLE 12

ALL THINGS CONSIDERED, WHICH DID YOU PREFER

	NUMBER	PERCENTAGES			PROBABILITY
		MARL.LGTS.	MARL.LT W/ FL	NO DIFFERENCE	
TOTAL PANFL	399	40.6	37.8	21.6	.5889
AGES 18-29	153	37.9	41.2	20.9	.6891
AGES 30-39	75	53.3	29.3	17.3	.0356
AGES 40-49	65	30.8	44.6	24.6	.2635
AGE 50 AND OVER	106	41.5	34.9	23.6	.5040
ALL MALES	183	42.1	38.8	19.1	.6620
MALES 18-34	90	48.9	35.6	15.6	.2033
MALES 35 AND OVER	93	35.5	41.9	22.6	.5413
ALL FEMALES	216	39.4	37.0	23.6	.7336
FEMALES 18-34	101	34.7	42.6	22.8	.5680
FEMALES 35 AND OVER	115	43.5	32.2	24.3	.2234
ALL 85MM HI-FI SMOKERS	302	42.1	34.8	23.2	.2030
AGES 18-34	149	45.0	33.6	21.5	.1603
AGE 35 AND OVER	153	39.2	35.9	24.8	.6891
MARIUOR LGTS.SMOCKERS	131	54.2	31.3	14.5	.0088
AGES 18-34	82	52.4	31.7	15.9	.0574
AGE 35 AND OVER	49	57.1	30.6	12.2	.0601
OTHER 85MM HI-FI SMOKERS	171	32.7	37.4	29.8	.5481
AGES 18-34	67	35.8	35.8	28.4	1.0000
AGE 35 AND OVER	104	30.8	38.5	30.8	.5610
ALL OTHER SMOKERS	97	36.1	47.4	16.5	.2633
LIGHT SMOKERS (<15)	43	39.5	34.9	25.6	.7585
MEDIUM SMOKERS (15-24)	143	38.5	39.2	22.4	.9310
HEAVY SMOKERS (25+)	212	42.5	37.7	19.8	.5004
PREFERRED CONTROL	162	100.0	.0	.0	.0001
PREFERRED EXPERIMENTAL	151	.0	100.0	.0	.0001

PRODUCT OPINION LABORATORY, 4018 MARL.LGTS.VS.MARL.LGTS.W/FLAVOR SUB.

JAN., 77

1000364390

TABLE 13

ALL THINGS CONSIDERED, WHICH DID YOU PREFER
BASED UPON PANELISTS WHO EXPRESSED A PREFERENCE

	NUMBER	PERCENTAGES		PROBABILITY
		MARL. LGTS.	MARL. LT W/ FL	
TOTAL PANEL	313	51.8	48.2	.5889
AGES 18-29	121	47.9	52.1	.6891
AGES 30-39	62	64.5	35.5	.0356
AGES 40-49	49	40.8	59.2	.2635
AGE 50 AND OVER	81	54.3	45.7	.5040
ALL MALES	148	52.0	48.0	.6620
MALES 18-34	76	57.9	42.1	.2033
MALES 35 AND OVER	72	45.8	54.2	.5413
ALL FEMALES	165	51.5	48.5	.7336
FEMALES 18-34	78	44.9	55.1	.5680
FEMALES 35 AND OVER	87	57.5	42.5	.2234
ALL 85MM HI-FI SMOKERS	232	54.7	45.3	.2030
AGES 18-34	117	57.3	42.7	.1603
AGE 35 AND OVER	115	52.2	47.8	.6891
MARLBORO LGTS. SMOKERS	112	63.4	36.6	.0088
AGES 18-34	69	62.3	37.7	.0574
AGE 35 AND OVER	43	65.1	34.9	.0601
OTHER 85MM HI-FI SMOKERS	120	46.7	53.3	.5481
AGES 18-34	48	50.0	50.0	1.0000
AGE 35 AND OVER	72	44.4	55.6	.5610
ALL OTHER SMOKERS	81	43.2	56.8	.2633
LIGHT SMOKERS (<15)	32	53.1	46.9	.7585
MEDIUM SMOKERS (15-24)	111	49.5	50.5	.9310
HEAVY SMOKERS (25+)	170	52.9	47.1	.5004
PREFERRED CONTROL	162	100.0	.0	.0001
PREFERRED EXPERIMENTAL	151	.0	100.0	.0001

PRODUCT OPINION LABORATORY, 4018, MARL. LGTS. VS. MARL. LGTS. W/ FLAVOR SUB.

2

TABLE 1

JAN., 77

1000364391

Table 14

THREE POINT QUALITATIVE ATTRIBUTES

	Marlboro Lights Smokers		Total Panel	
	<u>Control</u>	<u>Experimental</u>	<u>Control</u>	<u>Experimental</u>
Were the cigarettes:				
too hot?	20	40**	84**	104***
too cool?	6	5	26	29
about right?	102	83	285	262
	p<.02		NS	
Did the filter work:				
too effectively?	12	7	52	49
not effectively enough?	14	23	56	65
about right?	103	99	285	279
	NS		NS	
Were the cigarettes:				
too mild?	17	15	80	82
too strong	21	41*	90	98
about right?	88	70	216	206
	p<.02		NS	
Was the aroma:				
too strong?	17	30	66	81
too weak?	11	12	51	52
about right?	102	88	275	259
	NS		NS	
Did they burn:				
too slowly?	6	4	12	15
too rapidly?	37**	40**	136***	136***
about right?	86	85	247	244
	NS		NS	
Were the cigarettes:				
too dry?	39**	49***	134***	146***
too moist?	2	0	7	3
about right?	88	80	250	242
	NS		NS	

KEY: *p<.05
 **p<.01
 ***p<.001

1000364392

Table 15

TALLY OF DISLIKES ABOUT EACH CIGARETTE

<u>TASTE</u>	<u>Control</u>	<u>Experimental</u>
Dislike taste-flavor	18	25
Lacked taste-flavor	27	26
Aftertaste	32	29
Sweet taste	3	2
Bitter taste	4	2
Harsh taste	-	3
Too dry	15	23
<u>STRENGTH</u>		
Too strong	34	54
Too harsh	9	13
Hot	11	15
Too mild	25	27
Caused cough	4	3
Caused headache	1	1
<u>EFFECT ON MOUTH-THROAT</u>		
Irritated-burned tongue	1	1
Irritated-burned mouth	2	2
Irritated-burned throat	6	7
<u>PHYSICAL CHARACTERISTICS</u>		
Loose pack	12	9
Hard draw	11	17
Fast burn	44	38
Slow burn	-	1
Ash falls off	5	3
<u>FILTER</u>		
Filter	13	11
Too long	7	5
<u>MISCELLANEOUS</u>		
Unpleasant aroma	12	16
Not satisfying	2	2
Smoke more	2	2
Dislike length	5	3
Prefer menthol	1	1

1000364393

Appendix A

ANALYTICAL SUMMARY

	Control Marlboro Lights 85	Experimental Marlboro Lights 85 With Flavor Substitute 6986-24
IBM Code	D6AQJ-1	D6AQK-1
<u>Smoke</u>		
Butt Length, mm	34	34
FTC Tar, mg/cigt.	13.5	13.5
Nicotine, mg/cigt.	0.89	0.86
Puffs/cigt.	7.8	7.6
Filtration Eff., %	47	46
<u>Cigarette</u>		
Total RTD, in. of H ₂ O	3.9	3.9
Static Burn. Time, min.	7.3	6.7
Length, mm	84.3	84.4
Circumference, mm	25.1	25.1
<u>Paper</u>		
Additive, type	Cit.	Cit.
Porosity, sec.	10	10
<u>Filter</u>		
RTD, in. of H ₂ O	3.0	3.1
Inner	1.9	2.0
Outer	1.1	1.1
Length, mm	24.9	25.0
Inner	10.1	10.1
Outer	14.8	14.9
Weight, g	0.32	0.32
Inner	0.08	0.08
Outer	0.24	0.24
Tipping paper length, mm	31	31
Dilution, %	15	16
<u>Filler</u>		
Total alkaloids, %	1.56	1.54
Total reducing sugars, %	5.6	5.5
Wt. of tob., g	0.720	0.714
Rod Density, g/cc	0.242	0.240

1000364394

Appendix B

BALLOT

1000364395

PRODUCT OPINION LABORATORY
P. O. Box 26583 - Richmond, Virginia

PLEASE
RETURN BALLOT BY

Dear Panelist:

4018

B

With this ballot I am enclosing ten packs of cigarettes coded as follows:
R8 - 5 packs, N4 - 5 packs. First smoke the 5 packs of R8 and answer the questions in Part I of the ballot. Next smoke the 5 packs of N4 and answer the questions in Part II. After smoking R8 and N4 answer Part III of the test.

When the ballot is completely filled out, please return it to me in the enclosed postage-paid envelope.

Only the person whose name appears on this label should take the test. If there are any corrections (address, name, etc.) make them directly on the label. Does the change apply to all members of your family _____ or just to you _____?

Thank you very much - your cooperation in this test is most helpful.

Cordially,

Panel Leader

1000364396

PART I

TO BE ANSWERED AFTER YOU HAVE FINISHED
SMOKING R8 AND BEFORE YOU START SMOKING N4.

1. Check the box that best describes how you feel about the cigarette coded R8.

dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

2. What, if anything, did you like about cigarettes R8?

3. What, if anything, did you dislike about cigarettes R8?

4. Please tell us what you think of cigarettes R8 as follows:

- a. Were the cigarettes:

- ☐ too hot smoking
☐ too cool smoking
☐ about right

- e. Did they burn:

- ☐ too slowly
☐ too rapidly
☐ about right

- b. Did the filter work:

- ☐ too effectively
☐ not effectively enough
☐ about right

- f. Were the cigarettes:

- ☐ too dry
☐ too moist
☐ about right

- c. Were the cigarettes:

- ☐ too mild
☐ too strong
☐ about right

- d. Was the aroma:

- ☐ too strong
☐ too weak
☐ about right

Please do not write
in the spaces below.

19	23
20	24
21	25
22	

1000364397

PART II

TO BE ANSWERED AFTER YOU
HAVE FINISHED SMOKING N4 .

1. Check the box that best describes how you feel about the cigarette coded N4 .

dislike extremely	dislike very much	dislike moderately	dislike slightly	neither like nor dislike	like slightly	like moderately	like very much	like extremely

2. What, if anything, did you like about cigarettes N4 ?

3. What, if anything, did you dislike about cigarettes N4 ?

4. Please tell us what you think of cigarettes N4 as follows:

- a. Were the cigarettes:

- ☐ too hot smoking
☐ too cool smoking
☐ about right

- e. Did they burn:

- ☐ too slowly
☐ too rapidly
☐ about right

- b. Did the filter work:

- ☐ too effectively
☐ not effectively enough
☐ about right

- f. Were the cigarettes:

- ☐ too dry
☐ too moist
☐ about right

- c. Were the cigarettes:

- ☐ too mild
☐ too strong
☐ about right

- d. Was the aroma:

- ☐ too strong
☐ too weak
☐ about right

Please do not write
in the spaces below.

26	30
27	31
28	32
29	

Now please turn to Part III.

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PART III

TO BE COMPLETED AFTER YOU
HAVE FINISHED PARTS I AND II.

1. Would you please compare the two cigarettes and indicate which cigarette:

	R8	N4	No Difference
Has more flavor?	_____	_____	_____
Has the easier draw?	_____	_____	_____
Has more strength?	_____	_____	_____
Is more satisfying?	_____	_____	_____
Has the better aftertaste?	_____	_____	_____
Is cooler?	_____	_____	_____
Has the better aroma?	_____	_____	_____
Is milder?	_____	_____	_____

2. All things considered, which cigarette do you prefer?

Prefer R8 ☐
 Prefer N4 ☐
 No Preference ☐

What is the name of your usual brand? _____

Is it filtered? ☐ Yes ☐ No (check one)

Is it menthol? ☐ Yes ☐ No (check one)

If it is filtered, is it ☐ King Size or ☐ Extra Long (100mm)?

How many cigarettes do you smoke per day? _____

Please do not write in the spaces below.		
33	37	41
34	38	60-3
35	39	63-2
36	40	

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